UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

CERTIFIED MAIL - RETURNED RECEIPT REQUESTED

August 15, 1990

Dr. James E. Crowley
Director, Environmental Control
Ciba-Geigy Corporation
444 Saw Mill River Road
Ardsley, NY 10502

RE: Ciba-Geigy Consent Order: RCRA Docket No, I-88-1088
RFI Proposal - Phase IB Disapproval - Cranston, RI Facility

Dear Dr. Crowley:

The EPA has completed its review of Ciba-Geigy's RCRA Facility Investigation (RFI) Proposal submitted on April 2, 1990. In accordance with Section II of the Consent Order, the Agency has Disapproved Phase IB of the RFI Proposal based on the comments outlined in the enclosure to this letter.

All comments need to be resolved prior to final approval of Phase IB of the RFI Proposal. Many of these comments have already been discussed with you and your consultants and should come as no surprise. It is expected that your response to these comments will be in the form of revised sections/pages which can be inserted into the existing RFI Proposal to form a complete and up to date document. Each revised page should include the revision date and page number. If more than one (1) page is needed to replace any single page then the page numbers should be alphabetized (e.g. page 3-1a, 3-1b).

In order to keep this project on track, and to prevent the first sampling round from beginning in the middle of winter, a response to these comments must be submitted to EPA within twenty-one (21) days from receipt of this letter.

Failure to submit a complete response to these comments within the specified time period may be cause for EPA to demand stipulated penalties as required by the Consent Order.

If you have any questions, please contact Frank Battaglia of my staff at (617) 573-9643.

Sincerely,

Gary B. Gosbee, Chief
MA & RI Waste Regulation Section

Enclosure

cc: Mark Houlday, Woodward-Clyde Consultants
Carol Wasserman, Office of Regional Counsel, EPA

TECHNICAL REVIEW: CIBA-GEIGY RFI PROPOSAL

The following comments are provided as the basis for EPA's Disapproval of Ciba-Geigy's phase IB-RFI Proposal submitted on April 2, 1990.

Volume 1 - Chapter 2

1. Section 1.5.4: The Environmental Receptor Investigation is much too limited in scope. This section focuses only on the Pawtuxet River using a limited bioassay strategy. As per our discussions, this section must be expanded to include the river sediments, a broader bioassay strategy, and more sampling points up and down stream of the facility.

2. Figure 5-2: Item 7 should be called the Phase I Report and Phase II Proposal.

3. Page 1-2: The exposure scenarios must be developed to estimate both current and future uses of the site.

4. Page 1-3: The following references should be included: "Integrated Risk Information System (IRIS)" and the "Health Assessment Summary Tables".

5. Page 1-4: Existing chemical data has not been accepted by EPA and therefore should not be used for inclusion as a numeric input into the Risk Assessment. This statement should be deleted.

6. Page 1-6: The analysis of background soil samples should include fingerprint compounds and the sample should be collected at the 6-12 inch level. See Table 4-4 in Chapter 3. This Table should be corrected.

7. Page 1-9: The last paragraph should read "A naturally-occurring chemical... (from samples taken at EPA Approved background locations) for that medium.

8. Page 1-10: Exclusion of contaminants due to an unknown source is inappropriate for the on-site investigation but possible for the off-site soil investigation. Degradation products need to be factored into the decision making.

9. Page 1-11: The most recent update of IRIS and the EPA Health Effects Assessment Summary Tables (HEAST) should be used. IRIS should be the primary source of toxicological information.

The method for selection of chemicals of concern for class C carcinogens will not work with the procedures outlined on this page. There may not be RfD's or acceptable intake for chronic (AIC) exposures for all class C carcinogens. If RfD's or AIC's are not available on IRIS or HEAST for all Class C Carcinogens then the appropriate hierarchy of information found in Region I Guidance (see page 21) should be used (This also specifies when AIC should be used). If appropriate values can not be found EPA should be consulted for the agency acceptable value.

10. Page 1-15: Ingestion of sediments should be included as another potential exposure scenario.

11. Page 1-16: The list of sensitive receptor locations is incomplete. The Sprague Playground, Aldrich Junior High School, Christopher Rhode School and any others that may have been suggested should be included.

12. Page 1-17: The potential exposure routes should include dermal absorption from contact with surface water and ingestion of surface water.

Only incomplete pathways should be dropped from the analysis. "Inconsequential Routes" sounds very subjective and this method would limit the evaluation of total site risk if small, but additive risks were dropped.

EPA does not believe that the "Health Protective" level overestimates the exposure point concentrations. The conservative assumptions used in the risk assessment provides an upper bounds on possible risks.

13. Page 1-18: Percentiles should not be used for evaluating the "average" concentration. The regional guidance should be used rather than "Methods for Evaluating Attainment of Cleanup Standards" to determine exposure point concentrations.

Any models should be approved by EPA.

14. Page 1-19: Potential exposure point concentrations should be based on data representative of a SWMU. Current average and maximum concentrations are used to evaluate both the current and potential future exposures.

The reasonable exposure scenarios that are derived based on site specific factors and regional guidance documents will be combined with the average and maximum concentration for a specific SWMU or medium.

The ground water and surface water modeling should be approved by EPA prior to its use. The fate and transport modeling should be based upon current and validated monitoring data. Air dispersion models should also be validated by EPA prior to their use.

15. Page 1-20: The qualitative discussion of anaerobic or aerobic biodegradation and photodegradation should be included in a separate section of the risk assessment; perhaps in the discussion of uncertainty of the risk assessment.

The two exposure scenarios that should be used to evaluate the potential risk to human receptors should be the current use and potential future use. In most cases the regional approach has been to use the future residential scenario as the applicable potential future use of the land. The average and maximum concentrations should be applied to these scenarios. The regional guidance should be used to develop exposure scenarios.

16. Page 1-21: The estimates of potential daily intake should use the regional guidance as the guiding document for assumptions regarding body weight, breathing rate, ingestion rate, etc. If information is not available from the regional guidance the other documents identified in the text can be used as reference. However, it might be helpful to get prior approval of assumptions by EPA.

17. Page 1-22: It should be understood that EPA may not accept proposed guidelines developed by Ciba-Geigy's consultants.

Region I evaluates class C carcinogens as possible human carcinogens and this is used to estimate incremental lifetime cancer risks. If there are questions regarding the level of confidence of a class C carcinogen this can be addressed in the uncertainty section of the report.

18. Page 1-23: A total Hazard Index (HI) of one (1) should be used as the decision point for looking at chemicals on an individual basis.

19. Page 1-24: Developing RfD's from NOAELs or LOAELs, or developing cancer potency factors is not acceptable. In cases where information is not available, EPA may be able to provide appropriate, agency approved, data from EPA's environmental criteria and assessment office.

20. Page 1-25: The Conclusions and Recommendations section should include estimation of current and potential risks to human health.

The conservative estimates in the risk assessment <u>provide an upper bound of the risk estimate</u> and do not overstate the risk.

21. Page 2-1: Proposed media protection standards should be submitted with the RCRA Facility Investigation <u>Report</u> not the <u>Proposal</u>.

22. Page 2-2: The Regional "Supplemental Risk Assessment Guidance" should be used as a primary reference.

23. Page 2-4: Carcinogenic effects are to be considered additive regardless of target organs.

24. Page 3-3: The Corrective Measure Alternative evaluation should include current exposure as well as future potential exposure in addition to the potential impacts.

Volume 1 - Chapter 3

1. Section 2.5: What criteria will be used to determine if bench scale and pilot testing are necessary and therefore need to be conducted in phase II? Will bench scale and pilot testing be conducted for all technologies and for all media during phase II? Each bench scale and pilot testing (BS/PT) criteria section needs to be reworked to establish criteria to determine whether (BS/PT) will be conducted and when (BS/PT) will be conducted.

In a previous conference call with you and your consultants, a reference to Figure 2-1 was made. This figure was supposed to respond to the above issue. I have not received a copy of this figure.

The first paragraph in Section 2.5.2 contradicts the second paragraph on the previous page (page 2-8) by stating "the need for a corrective measures study will be determined from the Media Protection Standards (MPS)". These (MPS) will not be established until after all phase II tasks are completed.

2. Table 3-2: The description of the study areas for RW-2, RW-3, and RW-4 in Table 3-2 (Page 2 of 5) are incorrect. This table should be corrected.

3. Page 4-34: The nine sampling nodes need to be established along 30-foot grid lines in order to form a 60 foot by 60 foot grid. How did you determine that 3 samples were enough?

4. Section 4.1.13: Area of Concern #13 (AOC-13) has no surficial soil sampling included as a part of the release characterization strategy. During a previous discussion, it was agreed that a surficial soil sampling plan would be developed and sent to EPA. This plan would

consist of gridding and sampling (AOC-13) similar to the approach used in the waste-water treatment area. Analytical and physical analyses would also be the same. Since (AOC-13) is much larger than the waste-water treatment area, a larger number of samples would be taken and verified during both phase I sampling rounds. This study would satisfy the requirements for surficial soil sampling at SWMU's # 2, 3, 7, 8 & 11.

5. Page 4-44: This page should be amended to state that surficial soil samples will be taken at a depth of (6-12 inches) not (0-6 inches).

6. Page 4-47: Surficial sediment samples will be taken with a hand corer. Where will the actual sample be taken from the core? What is the diameter of the core? If this is not known at this time then these details must be supplied in the phase IA report.

7. General: More details must be given on how test pits and borings will be sampled. How deep are the test pits? How and where will borings be sampled and located? What type of instrument will be used for borings?

8. Table 4-3 & 4-4: Surficial soil samples should be sampled at the 0.5-1 foot level and not the 0-1 foot level. These tables should be corrected.

9. General: There is no discussion of proposed background ground water locations. Several locations should be proposed. Background ground water quality should be determined at the end of the first ground water sampling round.

10. Page 5-3: Twenty (20) times the EP Toxic limit is not appropriate for water samples. The EP Toxic limit itself should be used for water samples.

What are the BDAT concentrations? These should be listed for all of the waste constituents referred to in that paragraph.

Volume 2 - Chapter 4

1. Part A: Figure 4-1 does not identify the contractor performing data validation services or analytical services.

2. Part A: Section 6-3, Page 6-34 describes the filling procedures for aqueous volatile organic samples. The procedure implies that sealed sample vials will be reopened to add additional sample if air bubbles are present. If these vials have air bubbles they should be discarded and a new sample collected in order to prevent loss of volatiles due to container reopening.

3. Part A: Section 13 should be expanded to include a table which shows the field equipment and instruments which will be used, and the schedule of preventive maintenance which will be performed.

4. Part A: Section 14 should include the equations which will be used to evaluate precision for Appendix IX and fingerprint compounds in addition to physical parameter measurements.

Table 5-2 is referenced in this section but is not included in the document.

5. Part B: Since IT Analytical Services Corporation will not be doing the analytical work, a new "stand alone" Quality Assurance Project Plan (QAPP) needs to be provided which will incorporate the specific protocols for the new contractor. Since the new contractor will be using the existing IT document as an outline, comments #6-9 need to be addressed since they were not adequately addressed in the IT document. The new QAPP should replace its organizational charts and responsibilities with contractor specific charts, etc. All tables should reflect contractor specific detection limits and methods of analysis for all analytes. Historical recovery data which has been subjected to appropriate statistical analysis should be revised.

A checklist that indicates where changes to the IT QAPP were made needs to be submitted with the QAPP.

6. Part B: This part is missing some parts of a project-specific document, as required by QAMS-005/80. Section 3 does not provide a brief technical summary of the work including project objectives, major activities, and data to be collected, or provide a cross reference to the appropriate section of the Field Sampling Plan. Additionally, the plan would be improved by including a table which lists the number of samples of each matrix and analytical parameters.

7. Part B: Section 5 Tables 5-1 through 5-6 do not include QA objectives for all of the fingerprint compounds. Matrix specific objectives were not provided. Precision and accuracy goals were not provided.

8. Part B: Table 7-1 lists analytical parameters which are not listed in Table 6-8 of the data collection QA Plan. Which Table is correct? The incorrect Table should be corrected.

9. Part B: The detection limits provided in Tables 9.1 through 9.9 list Practical Quantitation Limits (PQL) in place of the Method Detection Limit (MDL) for the volume sampled. The difference between the two values is significant particularly in the analysis of groundwater for volatile organics where the regulatory limit may approach the PQL, for a 5-ml sample volume. This should be addressed by having the lab report all detected analytes below the PQL and qualify each with the appropriate qualifier as was discussed in a previous meeting.

CERTIFIED MAIL - RETURNED RECEIPT REQUESTED

August 15, 1990

Dr. James E. Crowley
Director, Environmental Control
Ciba-Geigy Corporation
444 Saw Mill River Road
Ardsley, NY 10502

RE: Ciba-Geigy Consent Order: RCRA Docket No, I-88-1088
RFI Proposal - Phase IB Disapproval - Cranston, RI Facility

Dear Dr. Crowley:

The EPA has completed its review of Ciba-Geigy's RCRA Facility Investigation (RFI) Proposal submitted on April 2, 1990. In accordance with Section II of the Consent Order, the Agency has Disapproved Phase IB of the RFI Proposal based on the comments outlined in the enclosure to this letter.

All comments need to be resolved prior to final approval of Phase IB of the RFI Proposal. Many of these comments have already been discussed with you and your consultants and should come as no surprise. It is expected that your response to these comments will be in the form of revised sections/pages which can be inserted into the existing RFI Proposal to form a complete and up to date document. Each revised page should include the revision date and page number. If more than one (1) page is needed to replace any single page then the page numbers should be alphabetized (e.g. page 3-1a, 3-1b).

In order to keep this project on track, and to prevent the first sampling round from beginning in the middle of winter, a response to these comments must be submitted to EPA within twenty-one (21) days from receipt of this letter.

CONCURRENCES							
SYMBOL	HRE	HRE					
SURNAME	[illegible]	Cooper					
DATE	8-14-90	8/15/90					

OFFICIAL FILE COPY

EPA Form 1320-1 (12-70)

• U S GPO 1988-0-206-471

Failure to submit a complete response to these comments within the specified time period may be cause for EPA to demand stipulated penalties as required by the Consent Order.

If you have any questions, please contact Frank Battaglia of my staff at (617) 573-9643.

Sincerely,

Gary B. Gosbee, Chief
MA & RI Waste Regulation Section

Enclosure

cc: Mark Houlday, Woodward-Clyde Consultants
Carol Wasserman, Office of Regional Counsel, EPA